



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,638	03/30/2001	Ryou Nakagaki	16869P023300	6928

20350 7590 03/07/2003

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

SHAPIRO, JEFFERY A

ART UNIT	PAPER NUMBER
----------	--------------

3653

DATE MAILED: 03/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,638

Applicant(s)

NAKAGAKI ET AL.

Examiner

Jeffrey A. Shapiro

Art Unit

3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 23-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 23-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 3653

DETAILED ACTION

Election/Restrictions

1. The Examiner acknowledges Applicants' filing of the amendment dated 11/4/02, thereby overcoming the restriction filed 10/12/02.

Drawings

2. The drawings are objected to because figure 20 appears to indicate "whit particles" instead of "white particles". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-11 and 23-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Stephan, et al. Stehan et al discloses the following.

As described in Claims 1, 6, 9 and 11;

1. imaging an inspected object (204) (see col. 5, lines 10-16);
2. extracting an image of a defect candidate from an image obtained by said imaging step (see col. 5, lines 10-16);

Art Unit: 3653

3. classifying said extracted defect candidate image into a first category (at least one defect type) (see col. 5, lines 16-20, noting "defects are classed as to type and size");
4. classifying said extracted defect candidate into a second category (evaluation of defect criticality) (see col. 5, lines 20-27, noting that criticality is construed as a kill ratio);
5. displaying on a screen said extracted defect candidate image and information relating to said classification into said first category and information relating to said classification into said second category (see figure 4 (note that it is necessarily so that the image data would be presented along with the defect data and kill ratio data, for example, which describes it, otherwise, effective review of said defect by an engineer (see col. 4, lines 65-67 and col. 5, lines 1-10) would not be available, said review necessarily requiring a visual representation of the particular defect so that appropriate changes can be made to the process or design of the chip);

As described in Claims 2, 7, 10 and 23-25;

6. said imaging of said inspected object is performed by illuminating and scanning an electron beam focused on said inspected object and detecting, in synchronization with said scanning, secondary electrons generated from said inspected object by said illumination (note that it is inherent to provide an electron beam for scanning, said electron beam

necessarily producing secondary electrons from the surface it is directed at—see Gleason et al, for example, at col. 2, lines 58-63);

As described in Claims 3, 4, 26 and 28;

7. said first category relates to defect criticality;
8. said second category relates to defect criticality;
9. said second category relates to defect type;
10. said first category relates to defect type;

(Note that regardless of whether or not the criticality or the defect type is determined first, the process result is substantially the same as Applicants' process. Note also that the location of a particular defect is captured by the scanner, which is necessarily used for determining criticality, since criticality can be defined in terms of the location of the defect. See col. 1, lines 61-64.)

As described in Claims 5 and 8;

11. said defect type includes one or more of the following: particle defects, flaw defects, circuit pattern short defects, circuit pattern open defects and voltage contrast defects; (Note that an inspection system such as that of Steffan et al necessarily determines such defects. See also Nishimura et al, figure 3 and Kumagai et al, figure 9.)

As described in Claim 9;

12. said second category relating to predicted yield from said inspected object (316) ;


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey A. Shapiro whose telephone number is (703)308-3423. The examiner can normally be reached on Monday-Friday, 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald P. Walsh can be reached on (703)306-4173. The fax phone numbers for the organization where this application or proceeding is assigned are (703)306-4195 for regular communications and (703)306-4195 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1113.



Jeffrey A. Shapiro
Patent Examiner,
Art Unit 3653



DONALD P. WALSH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

March 3, 2003